

AMENDMENTS TO THE DRAWINGS

The attached drawing sheet include changes to Figure 1. Figure 1 has been amended to add a "Prior Art" label.

Attachment: Replacement Figure 1

REMARKS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 1-4 and 6-22 are pending, with claims 1 and 6-22 amended, and claim 5 cancelled without prejudice or disclaimer, by the present amendment. Claims 1 and 15 are independent.

In the Official Action, the drawings were objected to; claims 1-11 and 13-20 were rejected under 35 U.S.C. § 102(e) as being anticipated by Hanamura (U.S. Patent Pub. No. 2001/0033619); claims 12 and 21-22 were rejected under 35 U.S.C. § 103(a) as being obvious in view of Hanamura and Official Notice.

Figure 1 is amended to include the label "Prior Art." Claims 1 and 15 are amended to recite the features of claim 5. Claims 1 and 6-22 are further amended maintain antecedent support or correct punctuation. Support for this amendment is found in Applicant's originally filed specification. No new matter is added.

In view of the incorporation of the features of claim 5 into claims 1 and 15, the rejections of claims 1 and 15 are moot. The following comments are directed to the current rejection of claim 5.

Briefly recapitulating, amended claim 1 is directed to

A method for transcoding an audio/video (A/V) stream, the method comprising:

dividing a compressed digital A/V stream into audio and video data;
transcoding the divided video data;

synchronizing the divided audio data with the transcoded video data by matching Presentation Time Stamps (PTSs) of the audio and video data; and

packetizing the synchronized audio and video data into a digital A/V stream.

Independent claim 15 recites, *inter alia*, a synchronizer configured to synchronize the divided audio data with the transcoded video data by matching Presentation Time Stamps (PTSs) of the audio and video data.

Hanamura describes a device configured to synchronize audio and video bit streams between input and output MPEG-2 transport streams on the basis of synchronous information element contained in the input MPEG-2 transport streams. The device of Hanamura is configured to establish a rate control method for controlling output bit rate of video bit streams in the variable bit rate.

Cited Fig. 1 of Hanamura describes a rate converter 600 that includes a MPEG-2 transport stream demultiplexer 610, a MPEG-2 transport stream multiplexer 620, a MPEG-2 video transcoder 640, and a system controller 650. The MPEG-2 TS demultiplexer 610 demultiplex an inputted MPEG-2 transport streams into a video TS (transport stream), an audio TS, and a system information TS. The MPEG-2 video transcoder 640 transcodes the input video TS, and outputs a video TS having a number of bits less than that of the inputted video TS.

However, cited Fig. 1 of Hanamura does not include Applicant's claimed synchronizer or packetizer. Furthermore, the description of Fig. 1 makes no reference to synchronizing video and audio, or packetizing.

Rate converter 700 in Fig. 2 of Hanamura is a schematic block diagram of a rate converter configured to synchronize the output video bit streams with the input video bit streams

on the basis of PTS and DTS contained in the input MPEG-2 transport streams. Rate converter 700 synchronizes the output video bit streams with the input video bit streams by: (a) decoding the video PES (Packetized Elementary Stream) into the video ES (Elementary Stream), the corresponding PTS, the corresponding DTS (Decoding Time Stamp) and other information; and (b) temporally storing the PTS (Presentation Time Stamp) and the DTS.

Rate converter 700 also generates the output video PES from the transcoded video ES, the corresponding PTS, the corresponding DTS, and the other information element so that the PTSs and the DTSs in the input video elementary streams of the video bit streams contained in the input MPEG-2 transport streams are matched with those in the corresponding video elementary streams of the output video bit streams contained in the output MPEG-2 transport streams as well as the PTSs and the DTSs in the audio frames of the audio bit streams contained in the input MPEG-2 transport streams are matched with those in the corresponding audio frames of the audio bit streams contained in the output MPEG-2 transport streams.

However, rate converter 700 in Fig. 2 of Hanamura does not synchronize video with audio. That is rate converter 700 does not synchronize divided audio data with transcoded video data. Paragraph [0320] describes that the various flags used in Hanamura make it possible to match the synchronization information elements of pictures in the input MPEG-2 transport streams with those of the corresponding pictures in the output MPEG-2 transport streams, respectively. In fact, paragraph [0252] describes that “The difference of (DTS'-DTS) causes not only the delay in the output MPEG-2 transport streams, but also *disables the synchronization with the audio bit streams.*” To address audio problems, paragraph [0433] of Hanamura describes an audio packet relocating method for preventing the audio buffer overflows from

taking place. However, the audio packet relocating method of Hanamura does not include synchronizing audio and video data before packetizing.

In other words, in Fig. 2 of Hanamura, there is video-to-video synchronization and audio-to-audio synchronization, but there is no audio-to-video synchronization.

Cited paragraphs [0280], [0314] and [0325] of Hanamura do not cure the above-identified deficiencies. Paragraph [0280] of Hanamura describes input MPEG-2 TS demultiplexer 210 shown in Fig. 6 of Hanamura is adapted to identify the type of the TS packets, including non-reduction TS packets such as the audio TS packets. First, Fig. 6 of Hanamura relates to a different embodiment than the circuits of Figs. 1 and 2 of Hanamura. Thus, any combination of features from the figures of Hanamura could only result in a rejection under 35 U.S.C. § 103(a), not U.S.C. § 102.

Second, cited paragraph [0325] of Hanamura describes that the PTS (i), DTS (i) and PTS_DTS_flag (i) inputted from the video PES packet decoder 242 are attached to the PES header of the corresponding picture i as the synchronization information elements PTS, DTS, and PTS_DTS_flag so as to ensure that the bit streams which have been transcoded and thus compressed will be synchronized with the bit streams which have not been transcoded nor compressed. However, as noted previously, the flags of Hanamura are used only to synchronize input video packets with output video packets, or to synchronize input audio packets with output audio packets. The flags of Hanamura are not used to synchronize video packets with audio packets.

Cited paragraph [0314] of Hanamura describes FIG. 9 as showing transitions of a target number of TS packets to be outputted at time interval of a predetermined duration. The video TS

packet buffer 247 stores the video TS transcoded by the video transcoding unit 244. The non-reduction TS buffer 230 stores the non-reduction TS packets (e.g., audio packets) demultiplexed by the input MPEG-2 TS demultiplexer 210, and outputs the stored non-reduction TS packets to the output MPEG-2 TS multiplexer 220 in synchronous with the video TS packet buffer 247 in the video TS processor 240.

However, cited paragraph [0314] of Hanamura, as well as the remainder of Hanamura, fails to disclose or suggest matching Presentation Time Stamps (PTSs) of the audio and video data in order to synchronize audio data with the transcoded video data. Instead, paragraph [0281] of Hanamura describes that input MPEG-2 TS demultiplexer 210 stores the positions of the non-reduction TS packets (e.g., audio packets) at a time interval having a predetermined duration (n), and outputs the non-reduction TS packets to the non-reduction TS buffer 230. The output MPEG-2 TS multiplexer 220 then reads the stored positions of the non-reduction TS packets (e.g., audio packets) while multiplexing so that the non-reduction TS packets contained in the output MPEG-2 transport stream arrive at the time at which the non-reduction TS packets contained in the input MPEG-2 transport stream are supposed to arrive at. This timer based buffer reading is not equivalent to Applicant's claimed matching Presentation Time Stamps (PTSs) of the audio and video data in order to synchronize audio data with the transcoded video data.

MPEP § 2131 notes that “[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). See also MPEP § 2131.02. “The identical invention must be shown in as

complete detail as is contained in the ... claim.” *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). Because Hanamura does not disclose or suggest all of the features recited in claims 1 and 15, Hanamura does not anticipate the invention recited in claims 1 and 15, and all claims depending therefrom.

Furthermore, assuming *arguendo* that elements of the various embodiments of Hanamura relate to components recited in Applicant’s claims, the combination of these components could only result in a rejection under 35 U.S.C. § 103(a), not U.S.C. § 102. Applicant requests that any future rejection based on Hanamura carefully consider which features of which embodiment are being relied upon in order to reject Applicant’s claims.

CONCLUSION

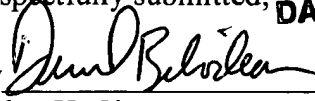
Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Michael E. Monaco, Reg. No. 52,041, at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

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If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§ 1.16 or 1.147; particularly, extension of time fees.

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By  **USPTO #42,325**

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Attachments